Amendments to the Specification:

Please amend the **Abstract of the Disclosure** as follows:

The present invention provides a system~~,~~ and method~~, and applications~~ for providing personalized user experiences based on the use of a core ontology and inferencing over the ontology using rules provided by a domain expert. ~~The population of users may be known to a commerce or information service from external and internal user data sources.~~ Information ~~(data)~~ about ~~this~~ the population ~~is~~ may be brought into a knowledge warehouse designed for on-line analytic processing, and potentially data marts. ~~Data can be sourced from external databases in batch or streaming mode and enhanced with real-time click stream events from internal observed user interactions. A reference ontology is either loaded into the system or defined via a domain expert.~~ The ontology forms the central reference point for data enrichment and precise personalization. Characteristic data ~~is~~ may be tagged in accordance with direct reference to the nodes of the ontology and may be enhanced via inferencing techniques. This results in ~~enriched and~~ more precise data tagging and equates to discovery of interest domains not directly observed in the initial source data. ~~Definitions of communities can be embedded in the reference ontology thereby allowing the rapid assignment of individuals to collaborative filters or discovered via statistical means using the enriched attributes. Discovery can be fed back into the ontology to add extensions to the ontology.~~ The same reference ontology is used to tag content, which results in a consistent tagging discipline for data and content centered on the reference ontology. ~~Using inference techniques based on the ontology, content may be enriched to discover attributes not explicitly announced in the content descriptions. The enriched data may be mapped to the enriched content resulting in a deeply personalized user experience.~~

Please replace paragraph **[37]** with the following amended paragraph:

[37] Figure 27 shows a sample reference ontology extended by ~~communities~~ community nodes in accordance with embodiments of the present invention.

Please replace paragraph **[42]** with the following amended paragraph:

[42] As an example, a node in the ontology could, but is not limited to, contain the following structural information:

Node id:	an ontology wide unique number identifying the node.
Label:	a name of the concept the node represents in the ontology
State:	a multivalued attribute indicating whether the node is active, deprecated or other such markings.
Timestamp:	time at which the node was last edited or altered.
Taxonomy source:	source identifier indicating the taxonomy or coding scheme for which the sub-ontology represents. This may, for example, be a coding standard. In the medical diagnosis domain, examples of coding standards ~~may be~~include ICD-9 ~~coding~~, READ ~~(http://www.visualread.org)~~, and SNOMED ~~(http://www.snomded.org)~~.
Ancestor nodes ids:	list of nodes that point to this node.
Predecessor node ids:	list of nodes to which this node points.

Please replace paragraph **[49]** with the following amended paragraph:

[49] The data warehouse 1008 may include specific identities of the users. In an alternative embodiment, ~~the~~ users may be de-identified. In this alternative embodiment, the system may query a separate database to receive authentication of the user. In response, the system receives a response as to whether or not the user is authenticated. So, even though the user is de-identified in data warehouse 1008, he may still receive personalized information from the system. De-identification is shown in greater detail in U. S. 09/469~~/02~~,102, now issued as U.S. Patent No. 6,734,886, entitled "Method of customizing a browsing experience on a world-wide-web site", as filed on December 21, 1999, whose contents are incorporated herein by reference.

Please replace paragraph **[59]** with the following amended paragraph:

[50] It may also be the case that no characteristic data exists in the knowledge warehouse 1310 (and by implication the data marts 1314) when the system is initialized. Characteristic data, if present in the knowledge warehouse 1310, may initially be mapped to correspond to nodes in the ontology 1300. Here, the data rules store 1307 contains basic rules to enable the inferencing engine 1321 to operate over the domain space. The rules base should contain relevant rules for the domain space represented by the ontology 1300. Generally, the better the rules in the data rules store 1307, the better the results from the inferencing engines 1321 and 1306.

Please replace paragraph **[72]** with the following amended paragraph:

[72] Another important component of the personalization system is a knowledge warehouse where minimally, user "characteristics" are stored. Characteristic data is information about a user that is obtained from external (not-the present system) sources or is information or preferences provided by the user or an agent acting on behalf of the user. Data that is imported into the knowledge warehouse from external sources is termed source data. Any data that is captured by the system without the user's explicit knowledge or that does not require the user to take direct action, is considered implicit characteristic data. ~~data~~ Data that is obtained as a result of the user making explicit choices or decisions is considered explicit characteristic data.

Please replace paragraph **[96]** with the following amended paragraph:

[96] For example, the present system may be used in a personal health management system to enable users to be provided with specific and relevant medial information related to their medical conditions and medial interests. Some ontologies that may make up the ontology in such a system can include the READ ~~(http://www.visualread.org)~~, SNOWMED ~~(http://www.snomed.org)~~, or ICD-9 encoding schemes. User's

characteristic data may include pharmaceutical data, medical claims records, explicit interest choices provided by the user's themselves. The application may be implemented using de-identified user authentication such that the present system operating organization would not know the true personal ~~identify~~ identity of the end user. Thus, one example application is the personalized AND de-identified medical advisory or wellness service~~, and example of which can be found a http://www.ppsi.com, Personal Path Systems, Incorporated~~.

Please replace paragraph **[124]** with the following amended paragraph:

[124] Next the changes in PIG computation and resulting level of personalization based on the user's implicit feedback are illustrated. Assume for this example, that user pstirpe, once logged into the present system enabled beverages web site, accumulates some click stream information indicating that the user is strongly interested in Sam Adams Bitter Draught and Bottled beer shown in Figure 19. The information accumulated as part of the click stream may be obtained from any standard web server. In this example, the web server used is Microsoft's IIS 5.0. Figure 19 shows that the user pstirpe navigated from ~~the~~ a web page ~~www.amazon.com/books/peebody.jps~~ at amazon.com to ~~the~~ a page ~~http://www.beverages.com/mybev.jsp/draught/bitter~~ at the beverages web site. Furthermore, the user ~~pstirpe~~ stayed at this page for 450 seconds. The next click stream entry for user pstirpe indicates that the user navigated to ~~the~~ another beverages web site page ~~http://www.beverages.com/mybev.jsp/bottled/bitter~~, and stayed at that page for 600 seconds. Assume that these two entries are the only click stream activities made by the user pstirpe. Assume that the pages to which the user has visited have associated with them the corresponding ontology nodes mapped as tags. Furthermore, assume that the click stream behavior is considered very significant given that the user stayed at those pages for the period of time indicated. Given these conditions, the present system may weight the click stream activities with a relatively high weight, such as 8.5 units of weight. Thus, there is a process by which the click stream feedback is mapped against the ontology and assigned weights. There

may be various ways of assigning the weights to the click stream history. For simplicity, assume that the weight is based on length of time the user stays at the page. The weighting could also be based on the number of times a user visits one or more pages with similar corresponding ontology tags. That is, if the user navigates the web site hitting different pages that happen to map to the same ontology node or nodes, then the weight of that ontology node(s) in the click stream history can be assigned a higher value. Note that the tags assigned to the click stream activity may be associated with a whole web page, section of the web page, or any element within the web page. When the user hits (click on) or potentially mouse-over a section of the page that has tags associated with it, the tag information can be added to the click stream history for incorporation into the user's characteristic data.

Please replace paragraph **[133]** with the following amended paragraph:

[133] Search engines for the World Wide Web typically operate by crawling the Internet, retrieving pages and storing them in a local store. Then, the pages are examined for tags, words, or content so that they may be categorized and placed in a large index. Typically, the index is a dictionary of words that may be found in the web pages, ordered in alphabetical order. For each term found on a web page that has been crawled, the page is weighted for that term and referenced from the index. Again, the papers by Page and Brin, and Kleinberg, referenced earlier, specify how search engines operate. ~~Additionally, the following URL may be used to learn more about how search engines operate (http://cis.poly.edu/suel/webshort).~~